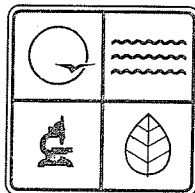


STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI AIR CONSERVATION COMMISSION



PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **06 2 006 - 015**

Project Number: 2006-01-021

Owner: Missouri Department of Corrections

Owner's Address: 2729 Plaza Drive, Jefferson City, MO 65109

Installation Name: South Central Correctional Center

Installation Address: 255 W. Hwy 32, Licking, MO 65542

Location Information: Texas County, S1, T32N, R9W

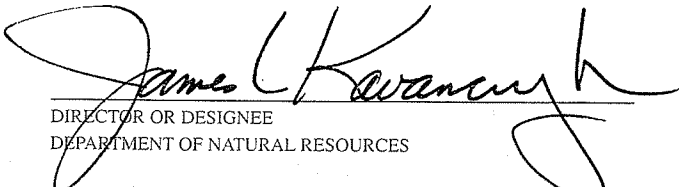
Application for Authority to Construct was made for:

Addition of an alternative fuel, liquified petroleum gas (LP gas) in the installation's existing three (3) fire tube hot water boilers. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- ☐ Standard Conditions (on reverse) are applicable to this permit.
- ☒ Standard Conditions (on reverse) and Special Conditions (listed as attachments starting on page 2) are applicable to this permit.

JUN 26 2006

EFFECTIVE DATE


DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional Office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed Special Conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

2006-01-021

Missouri Department of Corrections

2729 Plaza Drive, Jefferson City, MO 65109

South Central Correctional Center

255 W. Hwy 32, Licking, MO 65542

Texas County, S1, T32N, R9W

Addition of an alternative fuel, liquiefied petroleum gas (LP gas) in the installation's existing three (3) fire tube hot water boilers. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2006-01-021
Installation ID Number: 215-0074
Permit Number:

South Central Correctional Center
255 W. Hwy 32
Licking, MO 65542

Complete: January 5, 2006
Reviewed:

Parent Company:
Missouri Department of Corrections
2729 Plaza Drive
Jefferson City, MO 65109

Texas County, S1, T32N, R9W

REVIEW SUMMARY

- South Central Correctional Center has applied for authority to add an alternative fuel, LP gas, in their three (3) existing fire tube hot water boilers.
- Hazardous Air Pollutant (HAP) emissions are expected from the burning of liquefied petroleum gas but in insignificant amounts.
- New Source Performance Standard (NSPS) Subpart Dc "*Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*" applies to the three (3) existing boilers (EP1, EP2, and EP3).
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of nitrogen oxides (NO_x) are above de minimis levels but below major source levels.
- This installation is located in Texas County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was performed to determine the ambient impact of NO_x.
- Emissions testing is not required for the addition of burning LP gas.
- A revision to your Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

South Central Correctional Center is part of the Missouri Department of Corrections. The installation is located at 255 W. Highway 32 in Licking, Missouri and currently has three (3) fire tube hot water boilers and one (1) emergency diesel generator. The boilers, each having a maximum design capacity of 600 HP or 20 MMBTU/hr, currently burn both natural gas and diesel fuel No.2. This project will allow them to also burn LP Gas. The three (3) boilers and the emergency diesel generator were placed in service early in 2000 without obtaining a construction permit. The APCP issued notice of violation NOV# 2755 SE, dated May 1, 2000 to South Central Correctional Center for commencing construction prior to obtaining a permit.

The following permits have been issued to South Central Correctional Center from the Air Pollution Control Program.

Table 1: Construction Permits

Permit Number	Description
082000-003	Installation of three (3) fire tube hot water boilers and one (1) emergency diesel engine generator.

PROJECT DESCRIPTION

South Central Correctional Center has applied for authority to burn an alternative fuel in the three (3) existing 20 MMBTU/Hr fire tube hot water boilers (EP1, EP2, and EP3). The capability of burning LP gas will be in addition to natural gas and fuel oil No.2, which have been previously been approved.

EMISSIONS/CONTROLS EVALUATION

Nitrogen oxides (NO_x) are the main pollutants of concern for this review when burning LP gas as the primary fuel. Emission factors used for this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, "Compilation of Air Pollutant Emission Factors", Fifth Edition, Section 1.5, *Liquefied Petroleum Gas Combustion* (10/96). The Potential Emissions of the Application shown in Table 2 represent the potential emissions of burning LP gas only in the three boilers (EP1, EP2,

and EP3) on a continuous basis (8,760 hours per year). No pollution control equipment was accounted for in calculating the potential emissions. Existing potential emissions were taken from Permit Number 082000-003. Existing actual emissions were taken from the installation's 2004 Emission Inventory Questionnaire (EIQ).

The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2004 EIQ)	Potential Emissions of the Application (Note 1)	New Installation Conditioned Potential
PM ₁₀	15.0	4.0	0.25	1.69	N/A
SO _x	40.0	12.6	N/D	<0.01	N/A
NO _x	40.0	41.6	4.40	53.38	N/A
VOC	40.0	1.36	0.12	0.84	N/A
CO	100.0	10.3	0.74	8.99	N/A
HAPs	10.0/25.0	N/D	N/D	0.47	N/A

N/A = Not Applicable; N/D = Not Determined

Note 1: When determining the potential emissions of the three (3) boilers, the potential emissions of each type of fuel should be determined and the highest rate for each criteria pollutant should be used. In this case, NO_x is the only criteria pollutant with higher emissions when burning LP gas versus natural gas or fuel oil No. 2.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO_x are above de minimis levels.

APPLICABLE REQUIREMENTS

South Central Correctional Center shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an

Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.

- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

AMBIENT AIR QUALITY IMPACT ANALYSIS

A Screen 3 modeling analysis was performed to determine if the acceptable National Ambient Air Quality Standard (NAAQS) for NO_x will be exceeded at or beyond the property line of South Central Correction Center. The stack parameters as used in permit No. 082000-003 are below.

Table 3: Stack Parameters

Height (ft)	Diameter (ft)	Temperature (F)	Flow Rate (actual cubic feet/min)
20	2	250	7,363

The following table lists the air quality impact for NO_x.

Table 4: Ambient Air Quality Impact Analysis

Pollutant	Emission Rate (lb/hr)	Modeled Impact (µg/m ³)	NAAQS (µg/m ³)	Time Period
NO _x	12.2	61.27	100	Annual

As indicated in the above table, NO_x emissions from LP gas in the boilers are expected to be in compliance with the NAAQS.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted without special conditions.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 17, 2006, received March 17, 2006, designating Department of Corrections as the owner and operator of the installation.
- Inter-Office Communication from State of Missouri – Department of Corrections, dated January 5, 2006, received January 9, 2006.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Mr. Leland K. Miller
PME III
South Correctional Center
255 W. Hwy 32
Licking, MO 65542

RE: New Source Review Permit - Project Number: 2006-01-021

Dear Mr. Miller:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions and with your revised operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact me at (573) 751-4817, or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Thank you,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:shl

Enclosures

c: Southeast Regional Office
PAMS File 2006-01-021

Permit Number: